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EXAMINER
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ART UNIT	PAPER NUMBER
2662	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/518,695	YI, SEUNG-HEE	
	Examiner	Art Unit	
	David Odland	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claim 18 is objected to because of the following informalities: the claim recites the term 'thorough' and it appears this is a misspelling of the term 'through'. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claims 1 and 20 lines 4 and 5, respectively, it is unclear what is meant by transferring a message 'at a link set'.

The following list of limitations all lack antecedent basis for being limitations in their corresponding claims:

- Claim 3: 'the message distribution', 'the message discriminating unit' and 'the message routing unit'
- Claim 5: 'the message transfer unit'
- Claim 7: 'the previously determined route'
- Claim 8: 'said step for checking whether the signal message is routed'
- Claim 10: 'the signal link determination history' and 'the signal link determination data'

- Claim 13: 'the message routing unit' and 'the link determination history'
- Claim 14: 'the message transfer unit'
- Claim 16: 'the final message'
- Claim 21: 'the message transfer unit' and 'the local system'

Referring to claim 5 lines 2 and 3, it is unclear what is meant by "...transferring to a corresponding messages to the message transfer unit.

Referring to claim 8, line 4, it is unclear what is meant by routing a message 'at a link set'. Furthermore, it is unclear what is meant by "...determining the link of the link determination data as a signal link...", as recites in line 5.

Claim 10 is entirely unclear. Specifically, claim 10 recites, "...setting the signal determination history by a previous value when the link is determined as a signal link of the link determination history..."; it is unclear what the signal determination history is being set to. Furthermore, is unclear what is meant by "...a next time available signal link except for the signal link determination history..." as recites in lines 5 and 6. Lastly, the claim recites "...setting the signal link determination history...with the next time available signal link..." in lines 7-9;it is unclear what the signal link determination history and the signal link determination data are being set to, how history and data are interacting or corresponding to each other and what is meant by 'the next time available signal link.'

Claim 12 recites "...when determining the next link..."'it is unclear what link is next being determined.

Claim 13 recites "...selecting a link of the signal message on the link set of the set route and determining a link using the link determination history and link determination data..." in

lines 10 and 11. It is unclear what is meant by 'selecting a link ***of*** the signal message on the link set' (emphasis added); since the message is an electrical signal, it is confusing how a link can be selected from it. Furthermore, it is unclear why if the link is selected another link is also determined using the history and determination data.

Claim 17 recites "...analyzing whether the signal message is routed based on the same Signal Link Selection as the current Signal Link Selection and routing the message through the link of the link determination history for obtaining a stable route of the data..." This entire limitation is confusing. Since the current Signal Link Selection is in the message that is currently received (thus the same Signal Link Selection ***is*** the current Signal Link Selection), it is unclear what the message is being analyzed for. Furthermore, it is unclear what is meant by 'stable'.

Claims 2-12,14-19,21 and 22 are also rejected because they depend on rejected claims.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-9,11,12 and 20-22, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Glitho (USON 5,544,154), hereafter referred to as Glitho.

Referring to claims 1 and 20, a signal traffic routing method for a signaling network (a method of routing signaling messages through an SS7 network (see figures 1-3 and columns 4

and 5)), comprised of analyzing a signal message when a message transfer unit receives a signal message (the destination address of the message is analyzed to see where it is to be routed (see figures 1 and 2 and columns 4 and 5)) and determining a route to a final destination of the received signal message (the destination address of the message is analyzed to see where it is to be routed (see figures 1 and 2 and columns 4 and 5)), selecting a link for transferring a signal message at a link set of the determined route based on a link determination history and link determination data (a link is chosen to route the message on according to a routing table and the routing address of the message (see figures 1 and 2 and columns 4 and 5)) and transferring a signal message through the selected link (the message is transferred to the next appropriate node (see figures 1 and 2 and columns 4 and 5)).

Referring to claims 2 and 22, Glitho discloses the system discussed above. Furthermore, Glitho discloses updating the link determination history and link determination data based on the selected link (the routing tables are updated upon start-up and the address of the message is updated when transmitted between nodes (see column 1 lines 35-62)).

Referring to claims 3 and 21, Glitho discloses the system discussed above. Furthermore, Glitho discloses that the message distribution unit transfers a signal message to a user part of a local system (the message is transferred to the destination node from a node that is neighbor to it (see figures 1 and 2 and columns 4 and 5)), the message discriminating unit analyzes the received message and checks whether the final destination of the message is a local system (the neighboring node to the destination node looks at its table to see which link to transmit the message on (see figures 1 and 2 and columns 4 and 5)) and the message routing unit routes the message to a route connected with a neighboring signal transfer point transfers the message to

the final destination (nodes not neighboring the destination node transmit the message to the nodes that do neighbor the destination node (see figures 1 and 2 and columns 4 and 5)).

Referring to claim 4, Glitho discloses the system discussed above. Furthermore, Glitho discloses that a routing label of the signal message includes a 4-bit Signaling Link Selection, a 14-bit origination point code and a 14-bit destination point code (the messages in Glitho are SS7 network messages and as pointed out in the specification of the present invention on page 1 lines 15-19, it is standard for these messages to have 4-bit Signaling Link Selections, a 14-bit origination point codes and a 14-bit destination point codes).

Referring to claim 5, Glitho discloses the system discussed above. Furthermore, Glitho discloses that the step for determining the route comprises receiving a signal message (the messages are received (see figures 1 and 2 and columns 4 and 5)), analyzing a routing label (the address of the message is looked up in the nodes routing table (see figures 1 and 2 and columns 4 and 5)), transferring to a corresponding message to the message transfer unit when the final destination is a local system (the message is sent to a switch that neighbors the destination (see figures 1 and 2 and columns 4 and 5)) and providing the corresponding message to a user part (the message is received by the destination terminal (see figures 1 and 2 and columns 4 and 5)).

Referring to claim 6, Glitho discloses the system discussed above. Furthermore, Glitho discloses that the step for determining the route comprises receiving a signal message (the messages are received (see figures 1 and 2 and columns 4 and 5)), analyzing a route label (the address of the message is looked up in the nodes routing table (see figures 1 and 2 and columns 4 and 5)), transferring a corresponding message to the message routing unit when the final destination is not the local system (the message is sent to an intermediate switching node that

does not neighbor the destination (see figures 1 and 2 and columns 4 and 5)) and determining a route based on the message destination (the intermediate node uses its routing table to progress the message through the network toward the destination (see figures 1 and 2 and columns 4 and 5)).

Referring to claim 7, Glitho discloses the system discussed above. Furthermore, Glitho discloses that the step for selecting the link comprises checking a link determination history (the node receiving the message checks its routing table (see figures 1 and 2 and columns 4 and 5)) and whether a signal message having the same link selection field as the link selection field of the signal message currently received from the link set of the previously determined route is routed (the tables include the link sets of links that make up a plurality of routes to the destination and are used by currently received messages and previously received messages (see figures 1 and 2 and columns 4 and 5)).

Referring to claim 8, Glitho discloses the system discussed above. Furthermore, Glitho discloses that the step for checking whether the signal message is routed comprises: determining a link of the link determination history as a link for transferring the received message (the routing table is used to determine the path for the message when the signal message is routed at the link set (see figures 1 and 2 and columns 4 and 5)); and determining the link of the link determination data as a signal link for transferring the received signal message when the signal message is not routed (when the messages is received the message is routed even if it's the first time routing through the node and thus it have not been routed before (see figures 1 and 2 and columns 4 and 5)).

Referring to claim 9, Glitho discloses the system discussed above. Furthermore, Glitho discloses that the step for updating comprises judging whether the link that transfers the received signal message is a link of the link determination history (the link to which the message is routed is searched for in the switching nodes routing table (see figures 1 and 2 and columns 4 and 5)).

Referring to claim 11, Glitho discloses the system discussed above. Furthermore, Glitho discloses that the link determination history comprises a variable that represents that the signal message having a corresponding routing label is routed through a corresponding link (the routing table lists the possible links the messages can be routed onto (see figures 1 and 2 and columns 4 and 5)).

Referring to claim 12, Glitho discloses the system discussed above. Furthermore, Glitho discloses that the link determination data comprises a variable that represents a link available in the link set when determining the next link (the routing table indicates the link(s) that the message is to be next routed on (see figures 1 and 2 and columns 4 and 5)).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 10, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Glitho in view of Regnier et al. (USPN 5,930,348), hereafter referred to as Regnier.

Referring to claim 10, Glitho discloses the system discussed above. Glitho does not disclose that the said step for judging whether the link is a link of the link determination history comprises: setting the signal link determination history by a previous value when the link is determined as a signal link of the link determination history and updating the signal link determination data as a next time available signal link except for the signal link determination history; and setting the signal link determination history by the signal link determination data in the case that the signal link is determined as a signal link of the signal link determination data and updating the signal link determination data with the next time available signal link. However, Regnier discloses a method of updating the routing tables for SS7 messages wherein the updating includes an indication of the availability of the link sets (see abstract and figures 1 and 2)). It would have been obvious to one skilled in the art at the time of the invention to implement this method of Regnier is the system of Glitho because doing so would save system resources since the switching node would not waste time and processing power transmitting messages down links that are not available.

8. Claims 13-19, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Glitho in view of Qiu et al. (USPN 5,615,254), hereafter referred to as Qiu.

Referring to claim 13, Glitho discloses a signal traffic routing method for a signaling network (a method of routing signaling messages through an SS7 network (see figures 1-3 and columns 4 and 5)), comprising:

receiving a signal message at a signal transfer point, analyzing a routing label of the receiving message and determining the final destination (the destination address of the message is analyzed to see where it is to be routed (see figures 1 and 2 and columns 4 and 5));

analyzing whether the final destination of the received signal message is a local system based on a result of the analysis (the switching node neighboring the destination node will send the message to the destination otherwise the message is routed to an intermediate node (see figures 1 and 2 and columns 4 and 5));

transferring the received signal message to the message routing unit when the final destination is not the local system (the switching node neighboring the destination node will send the message to the destination otherwise the message is routed to an intermediate node (see figures 1 and 2 and columns 4 and 5));

setting a signal route for transferring the signal message using a Signaling Link Selection of the routing label by the message routing unit (a link is chosen to route the message on according to a routing table and the routing address of the message and the address of the next hop is inserted into the message (see figures 1 and 2 and columns 4 and 5));

selecting a link of the signal message in the link set of the set route and determining a link using the link determination history and link determination data (a link is chosen to route the message on according to a routing table and the routing address of the message and the address of the next hop is inserted into the message (see figures 1 and 2 and columns 4 and 5)).

Glitho does not disclose updating the link determination history data based on the determined link. However, Qiu discloses a system wherein the routing table of a network is updates over time (see column 1 lines 35-67)). It would have been obvious to one skilled in the art at the time

of the invention to update the routing tables of Glitho, as taught in Qiu, because doing so would make sure that the table is current and thus prevent sending messages through old and possible erroneous paths, thus improving the reliability of the Qiu system.

Referring to claim 14, Glitho discloses the system discussed above. Furthermore, Glitho discloses that the message transfer unit includes a message discriminating unit (the intermediate switches comprise means for analyzing the destination address of the received message (see figures 1 and 2 and columns 4 and 5)), a message distributing unit (the intermediate switches comprise means for sending out the messages to the next node (see figures 1 and 2 and columns 4 and 5)) and a message routing unit (the intermediate switches comprise means for determining the next link to route the message on (see figures 1 and 2 and columns 4 and 5)).

Referring to claim 15, Glitho discloses the system discussed above. Furthermore, Glitho discloses that a routing label of the signal message includes a Signaling Link Selection bit, a an origination point code and a destination point code (the messages in Glitho are SS7 network messages and as pointed out in the specification of the present invention on page 1 lines 15-19, it is standard for these messages to have 4-bit Signaling Link Selections, a 14-bit origination point codes and a 14-bit destination point codes).

Referring to claim 16, Glitho discloses the system discussed above. Furthermore, Glitho discloses that the step for analyzing whether the final message is a local system comprises: transferring a message to an operation unit when the final message destination is a local system (when the switching node neighboring the destination node receives the message it sends the message to the destination node (see figures 1 and 2 and columns 4 and 5)); and transferring the message to the message routing unit when the final message destination is not the local system

(if the node that receives the message is not the neighboring node of the destination, it sends the message to the next intermediate node toward the destination (see figures 1 and 2 and columns 4 and 5)).

Referring to claim 17, Glitho discloses the system discussed above. Furthermore, Glitho discloses that the step for selecting the link comprises: checking the link determination history (the switching node checks its routing table (see figures 1 and 2 and columns 4 and 5)), analyzing whether the signal message is routed based on the same Signal Link Selection as the current Signal Link Selection (the address of the message is analyzed based on entries in the routing table (see figures 1 and 2 and columns 4 and 5)) and routing the message through the link of the link determination history for obtaining a stable route of the data in the case that the signal message is routed in the past (the messages received by the switching nodes are routed according to the routing table entries which indicate primary routes to which past messages have been routed (see figures 1 and 2 and columns 4 and 5)) and determining the link of the Signal Link Selection as a signal link in the case that the signal message is not routed in the past (alternate links are selected when the primary link, which was used in the past, is no longer available (see figures 1 and 2 and columns 4 and 5)).

Referring to claim 18, Glitho discloses the system discussed above. Furthermore, Glitho discloses that the link determination data and link determination history comprises: a link determination history which is a variable representing that a signal message having a corresponding label is routed thorough a corresponding link (the routes for the messages, according to the routing tables, are variable and determined by an administrator (see figures 1 and 2 and columns 4 and 5)) and a link determination data which is a variable representing an

available link used when determining the next link (the routing table comprises the links to the next node in the path to the destination (see figures 1 and 2 and columns 4 and 5)).

Referring to claim 19, Glitho discloses the system discussed above. Furthermore, Glitho discloses that the message transfer unit comprises a message distributing unit that transfers a signal message to a user part of the local system (if the switching node neighbors the destination node it sends the messages to the destination nodes which is a local system (see figures 1 and 2 and columns 4 and 5)), a message discriminating unit that analyzes a message received from a message transfer unit and checks whether a final destination of the message is a local system (the switching node looks at the address of the incoming message to determine the next place to send the messages which is the destination if it is a neighboring node to the destination (see figures 1 and 2 and columns 4 and 5)) and a message routing unit that routes the message to a route connected with a neighboring signal transfer point to transfer the message to the final destination (the switching node looks at the address of the incoming message to determine the next place to send the messages which is the destination if it is a neighboring node to the destination (see figures 1 and 2 and columns 4 and 5)).

Conclusion

9. The following prior art, which is made of record and not relied upon, is considered pertinent to applicant's disclosure:

a. U.S. Patent Number 6393484 to Massarani et al.

b. U.S. Patent Number 6603769 to Thubert et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Odland, who can be reached at (703) 305-3231 on Monday – Friday during the hours of 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached at (703) 305-4744. The fax number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, who can be reached at (703) 305-4750.

deo

September 6, 2003

JOHN PEZZLO
PRIMARY EXAMINER